ASSIGNMENT 9

Textbook Assignment: "Computer Instructions and Man/Machine Interfaces" chapter 8, pages 8-1 through 8-26.

9-1. Various programming languages and types of languages are used to write computer programs. Which of the following are examples of procedural-type languages?

1. COBOL and FORTRAN
2. COBOL and BASIC
3. FORTRAN and BASIC
4. BASIC and Ada

9-2. For embedded applications, which of the following languages could be used?

1. BASIC
2. FORTRAN
3. COBOL
4. Ada

9-3. Which of the following languages is considered an interactive language?

1. Ada
2. BASIC
3. COBOL
4. FORTRAN

9-4. Before a program can be executed on a computer, it may need to be translated. Which of the following types of languages need to be translated?

1. High level only
2. Assembly only
3. High level and assembly
4. Machine code

9-5. Computer instructions to perform designated operations are contained in an instruction set. Which of the following is another name for instruction set?

1. Operation set
2. Repertoire of instructions
3. Operating system instructions
4. Instruction formats

9-6. Other names for the plan used to write a program include which of the following terms?

1. Algorithm
2. Formula
3. Utility
4. Application

9-7. Some programs are stored in ROM or PROM. Which of the following is another name used for these read-only programs?

1. Operating systems
2. Utilities
3. Hardwired
4. Applications

9-8. What type of program provides the link between the computer hardware and the user and enables the execution of operational programs?

1. Operating system
2. Application
3. Utility
4. User interface

9-9. Operating systems are a collection of many programs used by a computer to manage its own resources and operations. All of the following are types of operating systems except which one?

1. Programmed operational and functional
2. Single tasking
3. Multitasking
4. Real-time

9-10. Which of the following are names commonly used to describe the programs for tactical, tactical support, and/or nontactical applications?

1. Application programs only
2. Operational programs only
3. Operational and processing programs only
4. Application, operational, and processing programs

9-11. Commercially available programs designed to solve specific classes of problems are often called by which of the following terms?

1. Packaged software only
2. Off-the-shelf software only
3. Packaged and off-the-shelf software
4. On-the-shelf software

9-12. All of the following are considered utility programs except which one?

1. POFA
2. Operating system
3. Online diagnostic test
4. General routine to copy a disk

9-13. A predetermined and installed set of microinstruction is called what type of instruction?

1. Multiple instruction
2. Microinstruction
3. Mini-instruction
4. Controlled instruction

9-14. Which of the following types of instructions are classified by the function they perform?

1. Transfer of control only
2. Movement and transfer of control, only
3. Movement, transfer of control and arithmetic only
4. Movement, transfer of control, arithmetic, and logical

9-15. Data assignment instructions are normally held in which of the following types of registers?

1. Flag registers only
2. Memory address registers only
3. Memory address registers and active status registers
4. Flag registers and active status registers

9-16. All of the following are examples of data assignment instructions except which one?

1. Branch instruction address
2. Fixed point overflow
3. Interrupt lockouts
4. Compare designators

9-17. What type of instruction makes it possible to change the sequence in which a computer performs instructions?

1. Data assignment
2. Arithmetic
3. Logical
4. Branch

9-18. What type of instruction will change the sequence of instructions only if a condition is met?

1. Conditional branch
2. Unconditional branch
3. Logical branch
4. Automatic branch

9-19. What type of instructions include and, or, not, exclusive or/nor, compare, and shift instructions?

1. Data assignment
2. Arithmetic
3. Logical
4. Branch

9-20. In addition to classifying instructions by their functions, instructions maybe classified by their action on operands.

1. True
2. False

9-21. Instructions are the same on all computers.

1. True
2. False

9-22. All instructions include at least which of the following parts?

1. An operation code
2. An operand address
3. A modifier code
4. A register name

IN ANSWERING QUESTION 9-23, REFER TO FIGURE 8-3 ON PAGE 8-7 OF THE TRAMAN.

9-23. In a 16-bit microcomputer instruction, in what positions would the operation code be located?

1. Bits 2^5 and 2^4
2. Bits 2^{11} and 2^{10}
3. Bits 2^{15} through 2^{13}
4. Bits 2^{16} through 21^3

9-24. The formats of instructions on mainframe computers vary greatly for all of the following reasons except which one?

1. Manufacturer of the computer
2. Generation of the computer
3. Memory size of the computer
4. Type of computer

QUESTIONS 9-25 THROUGH 9-33 PERTAIN TO THE EXAMPLE INSTRUCTION FORMATS FOR A MAINFRAME COMPUTER WITH 32-BIT INSTRUCTIONS ON PAGES 8-8 THROUG 8-10 IN THE TRAMAN.

9-25. A total of how many basic instruction formats are given?

1. One
2. Five
3. Seven
4. Nine

9-26. Which of the following fields are consistent in all the instruction formats?

1. Designator field (a) only
2. Function code (f) only
3. Designator field (a) and function code (f)
4. Function code (f) and subfunction code (f_2)

9-27. The a field is used to identify all except which of the following registers?

1. Stack pointer
2. Accumulator
3. Memory
4. Index

9-28. Basic load, store, replace, and simple mathematical operations are performed using what instruction format?

1. I
2. II
3. IV-B
4. V

9-29. Format II instructions perform all except which of the following types of operations?

1. Interrupt
2. I/O commands
3. Single precision mathematics
4. Program sequence control jumps

9-30. What is the maximum value of a subfunction code of(a) two bits and (b) three bits?

1. (a) 2 (b) 3
2. (a) 2 (b) 7
3. (a) 3 (b) 5
4. (a) 3 (b) 7

9-31. Formats IV-A and IV-B are half-word instructions and two of them may be stored in one memory word. Which of the following methods is used to keep track of upper/lower instruction execution?

1. Active status register
2. Indirect addressing mode
3. Monitor clock
4. Accumulator

9-32. For operations such as setting, clearing, or testing an individual bit, what instruction format is used?

1. IV-B
2. IV-C
3. III
4. II

9-33. For single- and double-precision floating-point math operations, what instruction format would be used?

1. I
2. II
3. III
4. V

9-34. Which of the following are types of operand addressing?

1. Direct and indirect only
2. Extended, immediate, and implicit only
3. Indexed and relative only
4. Direct, indirect, extended, immediate, implicit, indexed, and relative

9-35. In which addressing mode is the operand itself contained in the instruction?

1. Extended
2. Immediate
3. Implicit
4. Relative

9-36. An instruction in which no operand address needs to be specified because the operation code contains all the information needed uses what addressing mode?

1. Extended
2. Immediate
3. Implicit
4. Indexed

9-37. Which addressing mode requires the operand address to be generated when the instruction is being prepared for execution?

1. Indexed operand
2. Immediate
3. Indirect
4. Direct

9-38. In relative addressing, what two items must be added together to obtain the correct instruction or operand address?

1. Base address and offset
2. Base address and memory register
3. Offset and index register
4. Memory word and memory register

9-39. Instruction sizes vary among types and generations of computers. They include which of the following sizes?

1. Character and full-word only
2. Full-word and half-word only
3. Full-word and double-length word only
4. Character, half-word, full-word, double-length word, and multiple word

9-40. Microcomputers commonly use instructions of what word lengths?

1. Multiple
2. Double
3. Full
4. Half

9-41. Man-machine interfaces have at least data entry and data display capabilities.

1. True
2. False

9-42. The data entry function of a man-machine interface is used to enter commands or set parameters for which of the following activities?

1. Test activities only
2. Computer operations only
3. Status and computer operations only
4. Computer operations, status, and test activities

9-43. When a computer is continually executing instructions one after another as directed by its logic circuits and software, it is in what operating mode?

1. Run
2. Step
3. Phase
4. Sequence

9-44. When you want to put the computer in the stop mode, which of the following methods can you use?

1. Manual action using STOP pushbutton
2. Program control using a STOP instruction
3. Both 1 and 2 above
4. Timing clock circuits

9-45. What mode of operation enables a technician to test the contents of registers and memory locations at the end of each instruction execution?

1. Run
2. Step
3. Phase
4. Sequence

9-46. Which of the following operating modes enable a technician to test conditions during the execution of an instruction?

1. Phase and sequence
2. Step and stop
3. Run and phase
4. Run and step

9-47. The purpose of master clear is to clear which of the following areas?

1. All I/O registers only
2. All CPU registers only
3. All I/O and CPU registers only
4. All memory locations only

QUESTIONS 9-48 THROUGH 9-65 PERTAIN TO MICROCOMPUTERS.

9-48. With a microcomputer, all of the following methods are commonly used to inform the processor of the system configuration except which one?

1. Battery protected storage
2. Switchboard panels
3. DIP switches
4. Jumpers

9-49. Each switch in a dual-inline package (DIP) indicates ON/OFF status. DIP switches can be used in which of the following ways?

1. Each single switch indicates the status of a component only
2. Each single switch indicates a requirement of the system operator only
3. Single and/or combinations of switches indicate the status of a component or the requirements of the system operator
4. Two switches must be used together to indicate any operational status

9-50. Board mounted DIP switches are designed so you can manually set them during which of the following tasks?

1. Component installation only
2. Component removal only
3. Initial configuration only
4. Component installation and removal, and initial configuration

9-51. Jumpers have which of the following characteristics?

1. Jumper settings are considered temporary
2. Jumpers must be physically removed and reinserted
3. Jumpers can only be manually positioned during component installation
4. Only a single jumper maybe used to specify a configuration option

9-52. A jumper connector consists of which of the following parts?

1. A receptacle only
2. A plug only
3. A receptacle and a plug
4. A set of switches

9-53. Jumpers have what purpose?

1. To define the configuration of each pcb
2. To connect the communications cables from a computer to an external device
3. To bridge a loose connection inside a computer chassis
4. To set a series of conditions to affect data flow within external devices

9-54. Which of the following are examples of functions affected by jumpers?

1. Mode of operation
2. Clock speed and wait states
3. I/O connections
4. Each of the above

9-55. Newer microcomputers have a hardware/configuration program stored as firmware.

1. True
2. False

9-56. In newer microcomputers, configuration data may be stored in which of the following ways?

1. In ROM
2. In EPROM protected by a rechargeable battery
3. In RAM protected by a rechargeable battery
4. On disk or tape, depending on the microcomputer's design

9-57. In microcomputers with battery protected storage, where is the battery located?

1. In the keyboard
2. On the backplane/motherboard
3. In an external battery pack
4. In the surge protector

9-58. DIP switches and battery protected storage provide different basic configuration data to the microcomputer.

1. True
2. False

9-59. All of the following are examples of system setup/configuration options except which one?

1. Date and time data
2. Floppy disk drive identifiers
3. Type of video display and refresh time period
4. ROM content

9-60. Microcomputers usually have which of the following types of power?

1. Ac only
2. Fixed time period rechargeable battery only
3. Ac and fixed time period rechargeable battery
4. Ac and variable time period rechargeable battery

9-61. A voltage or line select switch allows a microcomputer to operate in which of the following voltage ranges?

1. 100 to 130 only
2. 200 to 230 only
3. 100 to 130 and 200 to 230 only
4. 100 to 230

9-62. The keyboard and monitor of a microcomputer provide for all except which of the following functions?

1. Control cooling and battle short conditions
2. Running software programs
3. Performing tests
4. Viewing results

9-63. Internal diagnostics are performed in the power on sequence. The computer notifies you of errors (a) in what way and that everything is correct (b) in what way?

1. (a) Displays an error message if possible
   (b) Displays a message telling you to load the disk operating system
2. (a) Displays a menu to enable you to run external diagnostics
   (b) Displays a message telling you to load the DOS
3. (a) Displays an error message if possible
   (b) Loads DOS and displays an appropriate DOS display
4. (a) Displays an error message always
   (b) Loads DOS and displays an appropriate DOS display

9-64. Compared to internal diagnostics, LEDs provide which of the following advantages?

1. They simplify diagnostic software
2. They are easier to read than displayed messages
3. They save random access memory space
4. They enable the operator to select tests

9-65. Under DOS, you can also use disk based diagnostics with test selection menus. These menus usually provide which of the information on the monitor?

1. Test selection only
2. Test status only
3. Test status and error indications only
4. Test selection, test status, and error indications

9-66. In addition to providing information on the operating system and software programs, panels on some minicomputers provide which of following controls and indicators?

1. Power only
2. Temperature only
3. Power and temperature

9-67. Internal diagnostics, called built-in tests (BIT's), are designed to perform tests on which of the following devices?

1. CPUs only
2. IOCs only
3. CPUs and IOCs only
4. CPUs, IOCs, and any optional circuits

9-68. The pass/fail results of BITs will be displayed on the front panel. To decipher an error code from a failed test result and find the location of the module that may fix the problem, you should take which of the following actions?

1. Ask the senior DS
2. Look at the fault isolation table
3. Write down the error code and submit it to the trouble- shooting desk
4. Write down the error code and submit it to your supervisor

9-69. To configure a mainframe computer for reduced capability, you need to know which of the following information?

1. The capabilities and limitations of the system only
2. How to set the controls and switches on the computer and the switchboard only
3. How to set the controls and switches on the switchboard panels and the display and communications subsystems
4. The capabilities and limitations of the system, and how to set the switches on the computer, the switchboard panels, and the communications subsystems

9-70. Power to a mainframe computer is critical. Which of the following methods maybe used to ensure there is stable power?

1. Circuit breaker protection
2. Indicators for blower and logic to show if there is stable power
3. Interrupts to indicate power fluctuations
4. Each of the above

9-71. In addition to controls, switches, and pushbutton indicators, newer mainframe computers use which of the following devices to display status information and address the contents of registers?

1. Displays only
2. Keyboards only
3. Displays and keyboards
4. Keyboards and voice generated messages

9-72. On mainframe computers, internal diagnostics to test hardware and return pass/fail results may include which of the following types?

1. Diagnostics on tape or disk
2. Built-in tests (BITs)
3. Tests on NDRO
4. Both 2 and 3 above

9-73. To perform bootstrap on a minicomputer or mainframe computer, what type of memory is used?

1. DRAM
2. SRAM
3. CMOS RAM
4. NDRO

9-74. Inspect and change routines are used on minicomputers and mainframe computers for which of the following purposes?

1. To ensure the software is operating properly
2. To patch or revise software
3. To change hardware configurations
4. To change software/hardware interfaces

9-75. In a mainframe or minicomputer, what determines which peripheral device will be used to execute bootstrap?

1. The positions of the jumpers
2. The position of the bootstrap switch
3. The position on a DIP switch
4. The position of the step switch